# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/613,636 | 07/03/2003 | Bhargava K. Yenduri | SUNMP459 | 4610 |

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| EXAMINER |
|---|
| HOMAYOUNMEHR, FARID |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2132 | |

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | Application No. | Applicant(s) |
|---|---|---|
| *Office Action Summary* | 10/613,636 | YENDURI, BHARGAVA K. |
| | Examiner | Art Unit | |
| | Farid Homayounmehr | 2132 | |

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _03 July 2003_.

2a)☐ This action is **FINAL.**    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-36_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-36_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _03 July 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All  b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

KAMBIZ ZAND
PRIMARY EXAMINER

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _Not considered wrong APPL #_

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

Claims **1-26** have been examined.

### Information Disclosure Statement PTO-1449

1.     No Information Disclosure Statement was submitted by the applicant. *Wrong*

*APPlication # (See the serial # of IDS) <*

*Claim Rejections - 35 USC § 102*

2.     The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3.     Claims 1 to 36 are rejected under 35 U.S.C. 102(e) as being anticipated by

Rowland (US Patent Application Publication No. 2002/0129264 A1, filed January 10,

2002).

3.1.   As per claim 1, Rowland is directed to a computer system comprising: a

processor; a memory storage unit; an operating system comprising a kernel, said kernel

comprising a plurality of kernel modules, said kernel modules comprising signature

information; and a kernel module signature verification system for verifying said kernel

module signature information of each of said plurality of kernel modules as said plurality

of kernel modules are loaded into said kernel (paragraph 149 describes a Loadable

Kernel Module Agent 1306, which is an agent looking for loadable kernels and verifies

their validity. As shown in Fig. 13, item 1306 is one of the agents in the group of Mobile

Autonomous Code (MAC) Security Agents. Another one of the MAC agents is Known

Intrusion Agent 1305 (paragraph 148), which uses signatures to identify intrusions such

as suspect loadable kernel modules).

3.2.    As per claim 2, Rowland is directed to the computer system of claim 1, wherein

said kernel module signature information is generated via a public key and a private key

compilation in said kernel module (use of public and private keys to create a signature

verification protocol is well-known in the art).

3.3.    As per claims 3 and 4, Rowland is directed to the computer system of claim 2,

wherein said kernel module signature information comprises signature length data

unique to each of said plurality of kernel modules, said signature length or size data

used by said kernel module signature verification system in uniquely identifying each of

said plurality of kernel modules (the signature verification process generates the

signature of data and compares it with the signature. The generated signature and the

signature must be identical, which means the length and size of the generated signature

and the signature must also be identical).

3.4.    As per claim 5, Rowland is directed to the computer system of claim 4, wherein

said kernel module signature verification system comprises a kernel cryptographic

framework for verifying said kernel module signature information (paragraph 132).


3.5.    As per claim 6, Rowland is directed to the computer system of claim 5, wherein

said kernel module signature verification system further comprises a kernel

cryptographic framework daemon for performing verification lookup operations of

signature information provided to said kernel cryptographic framework in said kernel

(paragraph 153 shows use of system daemons to run a software process).


3.6.    As per claim 7, Rowland is directed to the computer system of claim 6, wherein

said kernel cryptographic framework daemon further performs module verification of

said plurality of kernel modules (see response to claim 6).


3.7.    As per claim 8, Rowland is directed to the computer system of claim 7, wherein

said kernel cryptographic framework retrieves pathname information of said signature

information for each of said plurality of kernel modules when said plurality of kernel

modules attempt to load up to said kernel to perform cryptographic operations

(retrieving the pathname information is part of a typical access process in a computer.

When the signature is fetched from the memory to the cryptographic process, it is

accessed by its pathname.)

3.8.    As per claim 9, Rowland is directed to the computer system of claim 8, wherein

said kernel cryptographic framework comprises a cryptographic service provider

registration unit for registering each of said plurality of kernel modules wishing to

provide cryptographic services in said kernel (per paragraph 29, all agents and

processes of Rowland register with a module that oversees their operation).


3.9.    As per claim 10, Rowland is directed to the computer system of claim 9, wherein

said kernel cryptographic framework further comprises a intra-kernel communication

unit for enabling communications between said kernel cryptographic framework and

said kernel cryptographic framework daemon (paragraph 29 suggests a Master Control

Process which is a communication unit allowing elements of the system to communicate

with one another.).


3.10.   As per claim 11, Rowland is directed to the computer system of claim 10,

wherein said kernel cryptographic framework further comprises a data structure unit for

storing said kernel module signature information (Rowland agents access to many

different kinds of data, including signature data. Use of datastructures in computer

systems to provide data to processes is well-known in the art).


3.11.   Limitations of claims 12-22, 25-33, 35 and 36 are substantially the same as

claims 1-11 above.

3.12.   As per claim 23, Rowland is directed to the computer operating system of claim

22, wherein said kernel cryptographic framework and said kernel cryptographic

framework daemon communicate via a plurality of input/output control commands

(paragraphs 29-31 describes how handlers communicate with one another to exchange

messages. The messages contain commands to initiate the functionality of each

handler).


3.13.   As per claim 24, Rowland is directed to the computer operating system of claim

23, wherein said input/output control commands comprise a door create command for

creating a plurality of cryptographic doors for enabling communication between said

kernel cryptographic framework and said kernel cryptographic framework daemon

(paragraph 87 discloses use of secured messaging between different elements of the

system).


3.14.   As per claim 34, Rowland is directed to the method of claim 33, wherein said

kernel cryptographic framework daemon verifies signature data contained in each of

said plurality of kernel cryptographic modules after said requesting kernel module has

registered with said kernel cryptographic framework (Rowland verifies validity of files,

messages and other data using the signature handler (paragraph 124-127). The

signature handler verifies signatures used by the Loadable Kernel Module Agent 1306,

or Known Intrusion Agent 1305 to detect unauthorized Kernel modules).

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Farid Homayounmehr whose telephone number is 571

272 3739. The examiner can normally be reached on 9 hrs Mon-Fri, off Monday

biweekly.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Gilberto Barron can be reached on (571) 272-3799. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

KAMBIZ ZAND
PRIMARY EXAMINER

Farid Homayounmehr

Examiner

Art Unit: 2132